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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/705,844	11/06/2000	Mitsuaki Oshima	2000 1524	5657

7590 08/26/2004
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 Washington, DC 20006

EXAMINER

LE, AMANDA T

ART UNIT	PAPER NUMBER
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2634

DATE MAILED: 08/26/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/705,844

Applicant(s)

OSHIMA, MITSUAKI

Examiner

Amanda T Le

Art Unit

2634

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 July 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 50-97 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 50-97 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☐ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 07222004.
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: _____.

Art Unit: 2634

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 06/04/2004 has been entered.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

4. Claims 50-97 are rejected under 35 U.S.C. 103(a) as being unpatentable over Halbert-Lassalle et al (U.S. 5,197,061, IDS filed on 11/06/00) in view of Lawrence et al (5,164,963, IDS filed on 11/06/00).

Regarding claims 50-53, 74-77, 66-69, Halbert-Lassalle et al discloses a device for the transmission of digital data comprising the following claimed limitations: “a first error correction code (ECC) encoder operable to encode the first data stream to produce an ECC encoded first data stream” (Fig. 3, 301); “a second error correction code (ECC) encoder operable to encode the second data stream to produce an ECC encoded second data stream” (Fig. 3, 304), “a modulator operable to modulate the ECC encoded first data stream according to an m-level PSK and to modulate the ECC encoded second data stream according to an n-level PSK to produce modulated signals” (Fig. 3, 311, 314), “an inverse Fast Fourier transformer (IFFT) operable to convert the modulated signals into IFFT converted signals, a transmitter operable to transmit the IFFT converted signals.” (Fig. 3, 32)

Regarding claims 58-61, 66, 82-85, 90-93, Halbert-Lassalle et al further discloses the following claimed limitations: “a Fast Fourier Transformer (FFT) operable to convert an input signal into a FFT converted signal; wherein the input signal has information of a first data stream and a second data stream, both of which are ECC encoded, said ECC encoded first data stream is modulated according to an m-level PSK, said ECC encoded second data stream is modulated according to an n-level PSK” (Fig. 3, 35); “a first error correction code (ECC) decoder operable to decode the first demodulated data stream to produce the first data stream” (Fig. 3, 36), “a second error correction code (ECC) decoder operable to decode the second demodulated data stream to produce the second data stream” (Fig. 3, 37). With respect to the claimed limitation “a

demodulator operable to demodulate the FFT converted signal to produce a first demodulated data stream and a second demodulated data stream”, it would have been obvious to one of ordinary skill in the art at the time of the invention that “the demodulation process” described by Halbert-Lassalle et al (Fig. 3, 34) can be carried out after the FFT process (Fig. 3, 35) if either PSK or QAM, not both, modulated signals are received at the receiver.

First, the prior art differs from the claimed invention in that the ECC schemes are not specifically taught as being BCH and RS. Nonetheless, such coding techniques are well known in the art at the time of the invention (see Lawrence et al, col. 11, lines 15-23). Since Halbert-Lassalle et al teaches the use of different channel coding technique for different data streams to obtain different level of protections, as stated above, it would have been obvious to one of ordinary skill in the art at the time of the invention to employ any well known coding techniques in the art, such as BCH or RS codings, to implement Halbert-Lassalle et al’s teachings. The selection of the channel encoding technique depends on the design criteria of the particular system. BCH codes are known for its random error correction capability. Reed Solomon codes are known as very efficient and most useful when multi-bit characters are being error-checked.

Second, with respect to claims 54-57, 62-65, 70-73, 78-81, 86-89, 94-97, Halbert-Lassalle et al discloses all the subject matters claimed, as explained above, except for “to modulate the ECC encoded second data stream according to an n-level QAM to produce a modulated signals”. In other words, the prior art reference differs from the claimed invention in that it specifies the modulation types to be n-PSK and m-QAM, rather than m-QAM and n-QAM. Nonetheless, the prior art further teaches that the protection level may be adapted by acting on the type of modulation and the type of modulation may be variable (col. 9, lines 48-

63). It would have been obvious to one of ordinary skill in the art at the time of the invention to select m-QAM and n-QAM as the two types of modulation to be used for achieving the desirable protection level. The particular selection is simply is a matter of choice to meet the design criteria of a particular application.

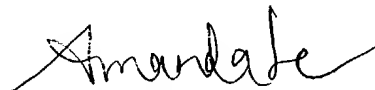
Finally, for all the above claims, Halbert-Lassale et al, taken collectively with Lawrence et al, fail to teach the claimed limitation of “the first data stream has data for demodulation for demodulating the second data stream.” Nonetheless, Halbert-Lassale et al does teach that “[S]o as to enable the receivers to know the modulation and/or the efficiency selected, pieces of assistance data 77 are generated at transmission. These pieces of assistance data 77 should enable the receiver to work, especially in the case of sound or audiovisual reception, as soon as it is put into operation. This may be achieved, for example, by the assignment of certain carriers to the transmission of assistance data” (col. 10, lines 4-11, Fig. 7). Accordingly, when it is necessary to provide error protection to the “assistance data” in a communication system, one of ordinary skill in the art would have found it obvious to apply Halbert-Lassale et al’s encoding/modulating process to “the assistance data”. Such modification would result in a communication as that of the claimed invention.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Amanda T Le whose telephone number is (703) 305-4769. .

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen Chin can be reached on (703) 305-6714. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



AMANDA T. LE
PRIMARY EXAMINER